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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,516	12/03/2003	Mikko Huttunen	60091.00267	5609

32294 7590 01/11/2006

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER	
LOFTIN, CELESTE	

ART UNIT	PAPER NUMBER
2686	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/725,516	HUTTUNEN, MIKKO	
	Examiner	Art Unit	
	Celeste L. Loftin	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2001*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☒ Claim(s) *1,7, and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ~~10/03/2003~~
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim 1-17 have been considered but are moot in view of the new ground of rejection.

Claim Objections

2. Claims 1, 7, and 13 recite the limitation "the radio path" in the limitation that reads 'by the receiver from a signal received from the radio path'. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 5-9, 11-14 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Schmutz, **US Patent 6,253,094,** in view of Komara, **US Patent 6,161,024.**

Regarding claim 1, Schmutz discloses a reception method in a radio system comprising at least two receivers (reads on the duplexers supply the received signals to the respective transceiver units) **(col. 5 line 44-45)** comprising a radio part and a baseband part (the transceiver is housed in the receiver sections that is composed of a wideband receiver, A/D converter, an I/Q translator, FFT based channelizer and a DSP

unit (baseband part)) **(col. 4 line 67 and col. 5 line 1-5)**, each receiver using a dedicated (reads on duplexer isolates the respective transmit and receive paths) **(col. 3 line 61-62)** narrowband channel (reads on supply processed ones of the narrowband communication channels) **(col.4 34-35)**, the method comprising:

separating, by the radio part (i.e. wideband receiver) **(col. 5 line 1)** of each receiver, the narrowband channel used by the receiver from a signal received from the radio path (the output of the receiver is down converted and sent to the channelizer, the channelizer extracts narrowband signals respective to those received by the receiver and sends them to the DSP) **(col. 5 lines 28-31)**;

forwarding the received separated narrowband channel from the radio part of the receiver to the baseband part for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) **(col. 4 lines 59-63 and col. 5 lines18-23)**;

separating, by the radio part of at least one receiver, in addition to the narrowband channel (the channelizer extracts narrowband signals respective to those received by the receiver) **(col. 5 lines18-23)** used by the receiver, at least one narrowband channel other than that used by the receiver from the signal received from the radio path (a receiver receives broadband RF signals from subscribers via antennas)**(col. 3 lines 59-61)**; and

forwarding said at least one other separated narrowband channel from the radio part of said at least one receiver to the baseband part of at least one other receiver

using said other narrowband channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP (there is one DSP per channel)) **(col. 4 lines20-26 59-63 and col. 5 lines18-23)**.

Schmutz fails to disclose at least two receivers each comprising a radio part, which comprises channeling means.

In a similar field of endeavor, Komara discloses at least two receivers each comprising a radio part, which comprises channeling means (each broadband transceiver 31,32,33 and 34 has the same structure with that for the first broadband transceiver 31 being shown in detail, the diversity receive section of the first broadband transceiver 31 receives the RF signals form the antennas and passes them to a digital channelizer) **(col. 3 lines 31-36).**

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify Schmutz to include at least two receivers each comprising a radio part, which comprises channeling means. Motivation for this modification would have been to increase the overall system reliability of the redundant overlay, which is better than the alternative approach, this reduces cost and utilizes a single back up.

Regarding claim 2, the combination discloses the method of claim 1. Schmutz further discloses the method comprising:

separating, each narrowband channel used by the system receivers from the radio path by the radio part of at least one receiver (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts

narrowband channel signals and send them to the DSP) **(col. 4 lines 59-63 and col. 5 lines18-23)**; and

forwarding each separated narrowband channel from the radio part of said at least one receiver to the baseband part of the receiver using the channel in question for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) **(col. 4 lines 59-63 and col. 5 lines18-27)**.

Regarding claim 3, the combination discloses the method of claim 1. Schmutz further discloses wherein said further processing of the narrowband channel in the baseband part comprises channel demodulation (reads on each of the digital receivers (DSP) demodulates the signals) **(col.5 lines 24-26).**

Regarding claim 5, the combination discloses the method of claim 1. Schmutz further discloses the method further comprising:

combining the narrowband channels for further processing in the baseband part of the receiver when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the combined signal represents the contents of a wideband signal which is a composite of respective narrowband signal channels) **(col. 4 lines 39-42)**.

Regarding claim 6, the combination discloses the method of claim 1. Schmutz further discloses the method further comprising:

selecting the best narrowband channel for further processing in the baseband part of the receiver when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the DSP units modulate and perform pre-transmission error correction on respective ones of the plurality of incoming signals) **(col. 4 lines 32-33)**.

Regarding claim 7, Schmutz discloses a radio system comprising:

at least two receivers (reads on the duplexers supply the received signals to the respective transceiver units) **(col. 5 line 44-45)** comprising a radio part and a baseband part (the transceiver is housed in the receiver sections that is composed of a wideband receiver, A/D converter, an I/Q translator, FFT based channelizer and a DSP unit (baseband part)) **(col. 4 line 67 and col. 5 line 1-5)**, each receiver being configured to use a dedicated (reads on duplexer isolates the respective transmit and receive paths) **(col. 3 line 61-62)** narrowband channel (reads on supply processed ones of the narrowband communication channels) **(col.4 34-35)**, and the radio part of each receiver being configured to separate the narrowband channel used by the receiver from a signal received from the radio path (the output of the receiver is down converted and sent to the channelizer, the channelizer extracts narrowband signals respective to those received by the receiver and sends them to the DSP) **(col. 5 lines 28-31)** and to forward the separated narrowband channel to the baseband part of the receiver for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) **(col. 4 lines 59-63 and col. 5 lines18-23)**, wherein

the radio part (i.e. wideband receiver) **(col. 5 line 1)** of at least one receiver is configured to separate in addition to the narrowband channel (the channelizer extracts narrowband signals respective to those received by the receiver) **(col. 5 lines18-23)** used by the receiver, at least one narrowband channel other than that used by the receiver from the radio path (a receiver receives broadband RF signals form subscribers via antennas 12 and 14) **(col. 3 lines 59-67 and Figure 2B)**, the system further comprising:

transmission means (from the channelizer the signals are fed to the DSP units) **(col. 5 22-23)** for forwarding said at least one other separated narrowband channel from the radio part of said at least one receiver to the baseband part of at least one other receiver using said other narrowband channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) **(col. 4 lines 59-63 and col. 5 lines18-23)**.

Schmutz fails to disclose at least two receivers each comprising a radio part, which comprises channeling means.

In a similar field of endeavor, Komara discloses at least two receivers each comprising a radio part, which comprises channeling means (each broadband transceiver 31,32,33 and 34 has the same structure with that for the first broadband transceiver 31 being shown in detail, the diversity receive section of the first broadband transceiver 31 receives the RF signals form the antennas and passes them to a digital channelizer) **(col. 3 lines 31-36).**

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify Schmutz to include at least two receivers each comprising a radio part, which comprises channeling means. Motivation for this modification would have been to increase the overall system reliability of the redundant overlay, which is better than the alternative approach, this reduces cost and utilizes a single back up.

Regarding claim 8, the combination discloses the system of claim 7. Schmutz further discloses wherein the radio part of at least one receiver is adapted to separate each narrowband channel used by the system receivers from the signal received from the radio path processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) **(col. 4 lines 59-63 and col. 5 lines18-27)**, the system further comprising:

transmission means (from the channelizer the signals are fed to the DSP units) **(col. 5 22-23)** for forwarding each of said separated narrowband channels from the radio part of said at least one receiver to the baseband part of the receiver using said channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) **(col. 4 lines 59-63 and col. 5 lines18-27)**.

Regarding claim 9, the combination discloses the system of claim 7. Schmutz further discloses wherein said further processing of the narrowband channel in the

baseband part comprises channel demodulation (reads on each of the digital receivers (DSP) demodulates the signals) **(col.5 lines 24-26).**

Regarding claim 11, the combination discloses the system of claim 7. Schmutz further discloses wherein the baseband part of the receiver is configured to combine the narrowband channels for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the combined signal represents the contents of a wideband signal which is a composite of respective narrowband signal channels) **(col. 4 lines 39-42)**.

Regarding claim 12, the combination disclose the system of claim 7, Schmutz further discloses wherein the baseband part of the receiver is configured to select the best narrowband channel for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the DSP units modulate and perform pre-transmission error correction on respective ones of the plurality of incoming signals) **(col. 4 lines 32-33)**.

Regarding claim 13, Schmutz discloses a receiver for a radio system comprising at least two receivers each (reads on the duplexers supply the received signals to the respective transceiver units) **(col. 5 line 44-45)** comprising a radio part and a baseband part (the transceiver is housed in the receiver sections that is composed of a wideband receiver, A/D converter, an I/Q translator, FFT based channelizer and a DSP unit (baseband part)) **(col. 4 line 67 and col. 5 line 1-5)**, each receiver being configured to use a dedicated (reads on duplexer isolates the respective transmit and receive paths) **(col. 3 line 61-62)** narrowband channel (reads on supply processed ones of the

narrowband communication channels) **(col.4 34-35)**, and the radio part of the receiver being configured to separate the narrowband channel used by the receiver from the signal received from the radio path (the output of the receiver is down converted and sent to the channelizer, the channelizer extracts narrowband signals respective to those received by the receiver and sends them to the DSP) **(col. 5 lines 28-31)** and to forward the received narrowband channel to the baseband part of the receiver for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) **(col. 4 lines 59-63 and col. 5 lines18-23)**, wherein:

the radio part (i.e. wideband receiver) **(col. 5 line 1)** of at least one receiver is configured to separate in addition to the narrowband channel (the channelizer extracts narrowband signals respective to those received by the receiver) **(col. 5 lines18-23)** used by the receiver, at least one narrowband channel other than that used by the receiver from the radio path (a receiver receives broadband RF signals form subscribers via antennas 12 and 14) **(col. 3 lines 59-67 and Figure 2B)**, the system further comprising:

the receiver is configured to forward said at least one other separated narrowband channel from the radio part of the receiver to the baseband part of at least one other radio system receiver using said other narrowband channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) **(col. 4 lines 59-63 and col. 5 lines18-23)**.

Schmutz fails to disclose at least two receivers each comprising a radio part, which comprises channeling means.

In a similar field of endeavor, Komara discloses at least two receivers each comprising a radio part, which comprises channeling means (each broadband transceiver 31,32,33 and 34 has the same structure with that for the first broadband transceiver 31 being shown in detail, the diversity receive section of the first broadband transceiver 31 receives the RF signals form the antennas and passes them to a digital channelizer) **(col. 3 lines 31-36).**

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify Schmutz to include at least two receivers each comprising a radio part, which comprises channeling means. Motivation for this modification would have been to increase the overall system reliability of the redundant overlay, which is better than the alternative approach, this reduces cost and utilizes a single back up.

Regarding claim 14, the combination discloses the receiver of claim 13. Schmutz further discloses wherein the radio part (i.e. wideband receiver) **(col. 5 line 1)** of the receiver is configured to separate each narrowband channel used by the radio system receivers from the signal received from the radio path the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) **(col. 4 lines 59-63 and col. 5 lines18-27)** and to forward each of said separated narrowband channels from the radio part of the receiver to the baseband part of the other receiver using said channel for further processing the receiver receives the

signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) **(col. 4 lines 59-63 and col. 5 lines18-27)**.

Regarding claim 16, the combination discloses the receiver of claim 7. Schmutz further discloses wherein the baseband part of the receiver is configured to combine the narrowband channels for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the combined signal represents the contents of a wideband signal which is a composite of respective narrowband signal channels) **(col. 4 lines 39-42)**.

Regarding claim 17, the combination discloses the receiver of claim 7. Schmutz further discloses wherein the baseband part of the receiver is configured to select the best narrowband channel for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the DSP units modulate and perform pre-transmission error correction on respective ones of the plurality of incoming signals) **(col. 4 lines 32-33)**.

5. Claims 4, 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmutz, **US Patent 6,253,094,** in view of Komara, **US Patent 6,161,024** in further view of Anderson et al. (Anderson) **US Patent 6,400,966**.

Regarding claim 4, the combination of Schmutz and Komara discloses the method of claim 1, but fails to disclose wherein at least one of the receivers comprises at least two radio parts.

In a similar field of endeavor, Anderson discloses wherein at least one of the receivers comprises at least two radio parts (reads on the receiver unit can simultaneously receive signals from different sectors (1 to N) of the RF/sector unit) **(col. 6 lines 1-2).**

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify the combination of Schmutz and Komara to include at least one of the receivers comprises at least two radio parts. Motivation for this modification is expand the capacity of one receiver servicing the sector.

Regarding claim 10, the combination of Schmutz and Komara discloses the system of claim 7, but fails to disclose wherein at least one receiver comprises at least two radio parts.

In a similar field of endeavor, Anderson discloses wherein at least one receiver comprises at least two radio parts (reads on the receiver unit can simultaneously receive signals from different sectors (1 to N) of the RF/sector unit) **(col. 6 lines 1-2).**

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify the combination of Schmutz and Komara to include at least one receiver comprises at least two radio parts. Motivation for this modification is expand the capacity of one receiver servicing the sector.

Regarding claim 15, the combination of Schmutz and Komara discloses the receiver of claim 13, but fails to disclose the receiver comprising at least two radio parts.

In a similar field of endeavor, Anderson discloses the receiver comprising at least two radio parts (reads on the receiver unit can simultaneously receive signals from different sectors (1 to N) of the RF/sector unit) **(col. 6 lines 1-2).**

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify the combination of Schmutz and Komara to include the receiver comprising at least two radio parts. Motivation for this modification is expand the capacity of one receiver servicing the sector.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Celeste L. Loftin whose telephone number is 571-272-2842. The examiner can normally be reached on Monday thru Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CL

JOY K. CONTEE
PATENT EXAMINER